

REMARKS

Applicant carefully reviewed the Office Action dated November 5, 2004 and notes with appreciation the indication of allowable subject matter in claims 15, 17, and 18.

On a preliminary note, Applicant submitted a Supplemental Information Disclosure Statement to identify the references cited in the search report issued on October 21, 2004 by the European Patent Office in a counterpart application. This submission was made on November 5, 2004, which is the mailing date of the first Office Action. Since the Examiner therefore did not have the opportunity to consider the references prior to issuing that Office Action, Applicant submits herewith the Supplemental Information Disclosure Statement, along with the requisite statement under 37 CFR 1.97(e). No fee is believed to be due for this submission, but if one is, the Examiner is authorized to debit it from Deposit Account 11-0978.

With respect to the formal objections, a replacement Abstract is presented to address the issue raised in the Office Action. Claims 1 and 13 are cancelled, thereby mooting the objections made with respect to them. As for claim 12, Applicant respectfully submits that this claim is in proper form, since only a single "element" is recited (namely, a plurality of tubes).

Applicant also identified that certain reference numerals are inadvertently replicated on Figures 2 and 3. Accordingly, a proposed amended version of Figure 3 is attached with the changes shown in red ink, along with a corresponding amendment to the specification. No new matter is added.

Turning to the claims, new claim 19 is presented for consideration. The claims formerly depending from claim 1 are also adjusted to depend from claim 19. New

claims 20-27 are also added. The following remarks explain why these claims patentably distinguish from the art cited by the Examiner.

Claim 19 reads on a magnetic separator for separating magnetic material from fluid flowing in a flow path comprising a plurality of tube portions disposable in the flow path with each tube portion being part of a larger tube disposable within the flow path. A magnetic shuttle in each tube portion is movable between a separator position in the tube portion and a release position in which it is withdrawn from the tube portion. Consequently, each shuttle can be moved between its positions by differential pressure being created across the shuttle. The tubes are also arranged in an array such that the forces between the magnets are balanced, and preferably a circular one as required by dependent claim 20. Full support for the inventions of claims 19 and 20 is found in the specification on page 6 at lines 3-7.

As a result of this structural arrangement, the shuttles can be relatively easily inserted in the tubes and require only a small amount of pneumatic pressure to move between their positions. This is in contrast to the situation where the forces are unbalanced, in which case the final shuttle can be extremely difficult to insert into its tube. This shuttle will therefore tend to become clamped to the inner wall of the tube, thereby making it difficult to move it between the two positions.

The arrangement shown in the Nakamura patent (U.S. Patent No. 4,722,788) does not resolve this problem since at least the magnets in the outer and innermost rings of the array will invariably experience unbalanced forces. This is precisely why the magnets 10 are all mounted on rigid rods 20, which are in turn mounted on a common movable plate 21 (see col. 4, lines 16-17, "a rod 20 is *integrally formed* with the permanent magnet 10 . . . and is securely joined to a lift device 21") (emphasis added). The magnets are thus held centrally within the tubes by the

corresponding rods while significant force can be applied to the plate, but are clearly not movable by a differential pressure, as required in claim 19. Indeed, such could not occur in the arrangement shown in the Nakamura patent, since the tubes are necessarily open ended to allow for passage of the rods 20. For this reason, it is believed that the invention of claim 19 is not anticipated by what is shown in the Nakamura patent, nor are any of the claims that depend therefrom. *See In re Schreiber*, 128 F.3d 1473, 44 USPQ2d 1429 (Fed. Cir. 1997)(recognizing that prior art does not *prima facie* anticipate if it does not inherently possess the functionally defined limitations of the claimed apparatus).

With respect to claim 16, which now depends from claim 19, Applicant wishes to note that the proposed combination of Nakamura with the Elliot patent (U.S. Patent No. 3,712,472) to meet the terms of this claim is improper. In particular, as noted above, the Nakamura approach requires rigid rods 20 on which magnets 10 are mounted (see col. 4, lines 16-17, *supra*). Combining this approach with the one shown in the Elliot patent in the manner proposed by the Examiner would not work, since as explained in the foregoing paragraph, differential pressure would have no effect on the magnets. If the rods are omitted, then the magnets would be unbalanced, which is undesirable for the reasons previously mentioned. The tertiary Carr patent (U.S. Patent No. 4,457,838) does not supply the missing teaching that would suggest combining the Nakamura and Elliot patents, either. In view of the disparate teachings of these patents, there would simply be no motivation for a skilled artisan to make the combination proposed by the Examiner besides the Applicant's specification (which of course is never a proper source for such a finding). Accordingly, claim 16 should be held allowable along with claim 19.

Turning to claim 12, the anticipation rejection based on the Nakamura patent

is respectfully traversed. Claim 12 requires that the magnets are movable by a differential pressure. This limitation is clearly not met by the arrangement shown in the Nakamura patent for the reasons provided in detail in the foregoing discussion. Accordingly, it cannot anticipate this claim in accordance with the holding in *In re Schreiber, supra*.

Finally, new claims 20-27 are presented. Claims 20-24 relate to a magnetic separator with tube portions in a circular array and with magnetic shuttles movable by differential pressure. Since this approach is not disclosed, taught, or suggested by any of the cited prior art patents, and is advantageous for the various reasons noted above, it is believed that these new claims are allowable as presented. The same is true for dependent claim 25, which requires that the magnetic shuttles in the circular array of tubes are independently movable (see page 4, ll. 15-19), as well as dependent claims 26 and 27.

In summary, it is believed that all claims as presented are in condition for allowance. Accordingly, a notice to this effect is earnestly solicited. In the event that some unforeseen point requires attention, please telephone the Applicant's attorney to expedite issuance of the patent. In the event some fee is due, please debit it from Deposit Account 11-0978.

Respectfully submitted,

KING & SCHICKEL, PLLC



Andrew D. Dorisio
Registration No. 41,713

247 North Broadway
Lexington, KY 40507
(859) 252-0889

CERTIFICATE OF MAILING

I hereby certify that this correspondence
is being deposited with the United States Postal
Service as first class mail in an envelope
addressed to: Mail Stop Amendment, Commissioner for Patents,
P.O. Box 1450, Arlington, VA 22213-1450, on January 14, 2015
Date 1/21/05 